

Embodied Virtuality: Speed, Perception and New Media
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This paper really constitutes the introduction to a much larger chapter, which is itself part of a larger research project. The goal of the overall project is to trace out the dynamics of the interaction between speed and politics as they function at the micropolitical level; looking at how individual bodies, minds, perceptions, subjectivities, and collectives are bound up in, and shaped by, accelerating flows in the context of global politics. In this chapter I seek to engage with the radical acceleration of information and communication technologies, and the impact they have on human perception. At stake is the charge levelled by critics such as Paul Virilio that such ICTs constitute a fundamentally *disembodying* force, capturing and paralyzing human perception. Against this image, I will argue that perception, even technologically mediated perception, is always profoundly embodied, and as such productively engaging with the effects of new ICTs requires would require a mode of analysis that takes seriously their material and corporeal characters. At the end of the paper, I gesture towards what such a mode of analysis would look like, a theory I pursue in the rest of the chapter.

Speed, Perception and Virtuality

Speed not only allows us to get around more easily; it enables us above all to see, to hear, to perceive and thus to conceive the present world more intensely. Tomorrow, it will enable us to act at a distance, beyond the human body's sphere of influence and that of its behavioural ergonomics...

...Doomed to inertia, the interactive being transfers his natural capacities for movement and displacement to probes and scanners which instantaneously inform him about a remote reality, to the detriment of his own faculties of apprehension of the real, after the example of the para- or quadriplegic who can guide by remote control – teleguide – his environment, his abode, which is a model of that home automation, of those 'Smart Houses' that respond to our every whim. Having been first *mobile*, then *motorized*, man will thus become *motile*, deliberately limiting his body's area of influence to a few gestures, a few impulses, like channel surfing.¹

In the passage above, Paul Virilio describes a central conception of his work, what might be termed the prostheticizing image of speed. In this image of speed technologies are figured as prosthetics which, as they are grafted on to the human body, begin to sap its vitality, and slowly hollow it out. From Virilio's perspective the acceleration of transportation and, most importantly, communication technologies paradoxically make us more immobile.² Speed technologies turn the

¹Virilio, Paul *Open Sky* Trans. Julie Rose (London: Verson, 2008) 12, 15, 16-17

² Note, we should not consider Virilio the first person to advance this particular position. Indeed, in its modern form this is

healthy human body into a paraplegic or quadriplegic body, reliant on prosthetics.³ Note, however, that, in the passage above, his focus is not, primarily, upon transportation technologies (a topic which he discusses in multiple other contexts, specifically that of warfare). Rather here, the question of the prostheticization of the human body is more closely linked to information and communication technologies (ICTs). It is our ability to gain information - to *see* beyond ourselves - that introduces a fundamental gap into the human body, a hole through which the self might drain away. Transportation technologies - even the most radically accelerated - still physically shift the body in space, forcing us to always take ourselves with us. It is ICTs that allow us (indeed, require us) to leave our bodies behind. Thus, in Virilio's account of this prostheticization of the body, it is not a transportation technology that introduces the fateful schism, but an ocular one.

Just when we were apparently procuring the means to see further and better the unseen of the universe, we were about to lose what little power we had of imagining it. The telescope, that epitome of the visual prosthesis, projected an image of a world beyond our reach and thus another way of moving about in the world, the *logistics of perception* inaugurating an unknown conveyance of sight that produced a telescoping of near and far, a *phenomenon of acceleration* obliterating our experience of distances and dimensions.⁴

As our communication technologies accelerate, as our eyes roam farther (and faster) than our bodies, they become an autonomous force in the world, part of a grander 'Vision Machine' as Virilio puts it.

Everything I see is in principle within my reach, at least within reach of my sight, marked on the map of the 'I can'. In this important formulation, Merleau-Ponty pinpoints precisely what will eventually find itself ruined by the banalization of a certain teletopology. The bulk of what I see is, in fact and in principle, no longer within my reach. And even if it lies within reach of my sight, it is no longer necessarily inscribed on the map of the 'I can'. The logistics of perception in fact destroy what earlier modes of representation preserved of this original, ideally human happiness, the 'I can' of sight...⁵

In this regards, communication and information technologies are, for Virilio, a fundamentally

a narrative we can trace at least as far back as Jean-Jacque Rousseau of the Second Discourse, for whom the technological advantages of the 'civilized' world, really only served to sap the modern human of their 'natural' robustness and vitality. As Bernard Steigler quite nicely sums it up, for Rousseau, "The man of nature, without prostheses, is robust, as robust as a man can be – and it is civilization that will weaken him." Bernard Steigler *Technics and Time, 1: The Fault of Epimetheus* Trans. Richard Beardsworth and George Collins (Stanford, CA: Stanford University Press, 1998) p. 115

³We might here already begin to question the Virilio's ablist assumptions and his normalizing of a particular image of the healthy, 'non-pathological', body.

⁴Virilio, Paul *The Vision Machine* Trans. Julie Rose (Bloomington: University of Indiana Press, 1994) p.4

⁵ Virilio, *The Vision Machine* p. 7

disembodying force. Perception is stripped from the body. The knowing and acting self is split in two. And though this process was inaugurated with the ocular technologies of the telescope and the microscope, the development of digital technologies has only accelerated matters. This is because where these previous technologies simply increased the scope of perception, advanced ICTs, especially digital ones, carry with them the possibility of increasing the pace of perception. This has to do both with the pace at which information is collected (and therefore the amount of it which is collected), and the speed at which it is analyzed. Virilio points out how data collection and analysis are increasingly automated. Virilio, of course, is concerned with the way in which this is applied to military matters, such as targeting and tracking, but we could just as easily point to technologies which track and analyze any number of phenomenon from weather systems, to stock markets, to 'suspicious' persons identified by facial recognition software in an airport. In all of these systems, the process of perception isn't just extended in space, it is intensified in time, taking in, and analyzing, information much more quickly than any human could. As Virilio points out

These synthetic-perception machines will be capable of replacing us in certain domains, in certain ultra high-speed operation for which our own visual capacities are inadequate, not because of our ocular system's limited depth of focus, as was the case with the telescope and the microscope, but because of the limited depth of time of our physiological 'take'.⁶

In such a context, it is increasingly not just the human body that is left behind, but the human mind (in the sense of that which absorbs and analyzes the information which perception acquires). Mark B.N. Hansen provides a gloss on the previous passage which explains just how radical Virilio views this shift to be; that it describes a final point in the disembodiment of perception and the prostheticization of the human, in which the human is completely split off from the perceptual process.

In contrast to earlier visual technology like the telescope and the microscope (not to mention cinema itself), which function by *extending* the physiological capacities of the body, contemporary vision machines bypass our physiology (and its constitutive limits) entirely. What is important is not just that machines will take our place in certain “ultra high-speed operations,” but the rationale informing this displacement: they will do so “not because of our ocular system's limited depth of focus...but because of the limited *depth of time* of our

6 Virilio *The vision Machine* p. 61

physiological 'take'". In short, what we face in today's vision-machines is the threat of *total* irrelevance: because our bodies cannot keep pace with the speed of (technical) vision, we literally cannot see what the machine can see, and we thus risk being left out of the perceptual loop altogether.⁷

Virilio's perception of advanced ICTs as a fundamentally disembodied and dehumanizing force in the world is one that is shared by a host of other critics from both high and low culture.⁸

What is more, we should not be surprised by how widely held this position is, as it is, in many ways, simply the flipside of what many boosters of those same ICTs maintain. A focus on the disembodied effects of ICTs is just as common among technophiles, but here the tale is told in a tone of voice that invokes liberation, rather than denigration. Liberation from the awkward constraints of space. Liberation from the limitations of the flesh. Adrian Mackenzie gives a lovely account of how these themes are played out in a set of ads for Toshiba computers, selling that most liberating of technologies 'wireless internet'.

In 2003, Toshiba laptop advertisements showed a man usually alone in remote locations, although he was occasionally at work in a casually stylish office meeting. He stood on a rocky promontory beside a storm-tossed sea, he sat in a treehouse looking down on the children playing in a sun-filled backyard, he looked out from a platform high above a sports stadium, or he lay on the grass in the middle of a park on a fine day. It was hard to tell who was working and who was not since these men were not obviously dressed for work. Each time, he looked at a laptop screen on which some other photographic image had been graphically superimposed: an office full of people, a library stocked with books, a scene from an action film. In each case, the superimposed image was somewhat incongruous with the geographic location. The freedom to connect "in new places" that intel's promotions refer to recurs across many different corporate promotions of wi-fi. An affirmation of "freedom" - "enter the world of free computing" (Toshiba 2003), "lose the wires, be free" (MyZones 2003) - is attached to an absence of wires. Not having to plug a computer into a socket in the wall to do e-mail, download files, or surf the Web, means that the screen loses its moorings and begins to float around. The socket in the wall to which screens are tethered dissolves. In other words, for the unwired user, the relation between screen and fixed infrastructure changes. Communication is no longer incarcerated, connectivity become quasi-independent of location, and in this liberated space, other become somewhat invisible.⁹

This image of ICTs producing a radical disarticulation of space will be unsurprising to anyone even remotely familiar with the tropes of contemporary info-capitalism. In this world, as Virilio has correctly

⁷ Hansen, Mark B. N. *New Philosophy for New Media* (Cambridge: MIT Press, 2006) p. 103

⁸ A not at all exhaustive list would include references to Jean Baudrillard, Cass Sunstein, Neil Postman, Sherry Turkle.

⁹ Mackenzie, Adrian *Wirelessness: Radical Empiricism in Network Culture* (Cambridge, Mass: MIT Press, 2010) p 103

diagnosed, space becomes secondary to time and dromography replaces geography. This process is not just de-spatializing or de-materializing, it is also dis-embodiment. Note that, in the narrative above, it is not just that there is a disjunct between the location outside the screen and the location in the screen, but also a dislocation between the posture and styling of the body of the screen's owner, and the contents of the screen. This is the significance of Mackenzie's telling insight that "these men were not obviously dressed for work". Though the body might be at play, the mind is at work (or vice-versa). The extension of the senses through the digital network is also the sheering off of the mind from the body, the radical disembodiment of accelerative technologies. Indeed, this kind of separation is necessary in a world in which business happens – in the words of the title of Bill Gates' book - "@ the speed of thought"¹⁰. This account, of course, doesn't go as far as Virilio's, arguing for human obsolescence in the context of accelerating ICTs. In these accounts and advertisements, it is exactly human mastery which is promised, mastery through overcoming the limitations of world and flesh, through 'entering the world of free computing'.

This image of ICTs as a disembodiment, and therefore liberating, force has deeper roots than simply contemporary advertisements. In many ways, this narrative entered the collective consciousness through William Gibson's landmark cyberpunk work, *Neuromancer* where the term 'cyberspace' was first invoked.

Cyberspace. A consensual hallucination experienced daily by billions of legitimate operators, in every nation, by children being taught mathematical concepts... A graphic representation of data abstracted from the banks of every computer in the human system. Unthinkable complexity. Lines of light ranged in the nonspace of the mind, clusters and constellations of data. Like city lights, receding.¹¹

Though Gibson can hardly be presented as an unreflective technophile (still less as a booster of late modern infocapitalism), the language of this description - with its invocation of cyberspace as a "nonspace of the mind" (in which presumably, things happen '@ the speed of thought') - provided our culture with a visual imaginary for thinking about increasingly prevalent digital networks. Gibson

¹⁰ Gates, Bill *Business @ the Speed of Thought* (New York: Grand Central Publishing, 1999)

¹¹ Gibson, William *Neuromancer* (New York: Ace Books, 1984) p. 51

equated the engagement with digital information networks fundamentally as a process of *disembodiment* and *virtualization*. As N. Katherine Hayles notes, in the context of the increasing prevalence of digital networks, of flows of information as the foundation of economics, culture, politics and society, there is the tendency to think in terms of the primacy and independence of flows of information and perception over the materiality of space and body.

Especially for users who may not know the material processes involved, the impression is created that pattern is predominant over presence. From here it is a small step to perceiving information as more mobile, more important, more *essential* than material forms. When this impression becomes part of your cultural mindset, you have entered the condition of virtuality.¹²

To employ this trope of virtuality, whether used in a discussion of economics, culture, politics or society, is almost always to speak in a language of disembodiment (and the liberation that disembodiment brings). Hayles points to a strain of social and scientific thought that “construct[s] virtuality...as a metanarrative about the transformation of the human into a disembodied posthuman.” This posthuman narrative is played out in multiple trajectories of cybernetic and information theory research. Hayles' discusses the fundamentally disembodiment assumptions of this metanarrative, noting “the posthuman view privileges informational patterns over material instantiation, so that embodiment in a biological substrate is seen as an accident of history rather than an inevitability of life.”¹³

However, though this narrative has unquestionably intensified with the digital revolution, we should not think that this desire for liberation through disembodiment is a new trend. Laura Ephraim does an exceptional job of noting how, in the 19th century, the telegraph was hailed as a fundamentally disembodiment technology. As she puts it

With the advent of the telegraph in 1837 and its subsequent expansion and popularization, many Victoria Brits and Americans experienced a new and deepened hybridity between themselves and an electronic instrument. They responded to their real or perceived connections with the telegraph with new and sometimes fantastic visions of human thought's liberation from the limitations of the human body.¹⁴

12N. Katherine Hayles *How We Became Posthuman* (Chicago: University of Chicago Press, 1999) p. 19

13 Hayles *Posthuman* p. 2

14Laura Ephraim "'An Electric Union Blest': Post-humanist Visions from the Age of the Telegraph" *Unpublished Paper presented at APSA 2011*, Seattle, WA. p. 4

Indeed, much of the contemporaneous discourse around the telegraph mimicked the liberating and disembodied language which accompanies contemporary accounts of digital technologies, as commentators argued that "electronic transmission of messages cut the tie between the communication of thought and the transportation of bodies and objects, and seemed to herald the liberation of human consciousness itself from the material body, stuck as it is in time and space."¹⁵

Indeed, beyond such particular technological instantiations, the will to disembodiment, to liberation from the constraints of materiality and corporeality is at least as old as western philosophy itself. We can think here of the founding role of Socratic philosophy, with its privileging of the world of being over the world of becoming, and his pursuit of the life of the mind over the bodily pleasures. We should also raise Descartes contribution to modernity, through his ontological division of the world into extended matter and unextended spirit, thus providing the foundations for a model of thought, perception and *information* untainted by corporeality.¹⁶

The roots of this will to disembodiment can potentially be found in Nietzsche's account of *ressentiment*. In *Thus Spoke Zarathustra* Nietzsche discusses the 'despisers of the body,'¹⁷ those so resentful over the suffering they feel that they wish to cast off the constraints of this body and this world. Nietzsche describes this *ressentiment* fuelled rejection of the body, saying that it is a "[d]runken joy...for the sufferer to look away from his suffering and to lose himself."¹⁸ In *Zarathustra*, Nietzsche primarily discusses the despisers of the body in their religious garb, but elsewhere he also relates it to specific strands within Western metaphysics. However, this will to disembodiment also has a technological instantiation, which Virilio does an excellent job of laying out. Virilio notes how the

¹⁵ Ephraim p. 8

¹⁶ N. Katherine Hayles also points out the role that this will to disembodiment has played in major political ideologies such as liberalism, saying "...one could argue that the erasure of embodiment is a feature common to *both* the liberal humanist subject and the cybernetic posthuman. Identified with the rational mind, the liberal subject *possessed* a body but was not usually represented as *being* a body. Only because the body is not identified with the self is it possible to claim for the liberal subject its notorious universality, a claim that depends on erasing markers of bodily difference, including sex, race and ethnicity." *How We Became Posthuman* p. 4-5

¹⁷Nietzsche, Friedrich *The Portable Nietzsche* "Thus Spoke Zarathustra" Trans. Walter Kaufmann (New York :Penguin Classics, 1982) p. 146

¹⁸ Nietzsche "Zarathustra" p. 143

disembodying tendencies of contemporary technologies serve to soothe the suffering of *ressentiment*, allowing us to escape the bodies that thwart our desires for absolute control, both our own, and others'.

To prefer the virtual being - at some remove - to the real being - close up - is to take the shadow for the substance, to prefer the metaphor, the clone to a substantial being who gets in your way, who is literally on your hands, a flesh-and-blood being whose only fault is to be there, here and now, and not somewhere else....Mysteriously the science of machines exiles us both from the geophysical world and from the physical body of another who always contradicts my ego and whose vital necessity is a mere shadow of what it once was in the age when the reign of the animal in all its energetic power still dominated the synthetic, or rather surrogate, energies that have since carried the day.¹⁹

The technological thus gives us the opportunity of overcoming our suffering, overcoming our *ressentiment* exactly to the extent that it virtualizes us, liberates us from the intransigence of world and flesh. In this regards, Nietzsche and Virilio are united in their diagnosis of the roots of this will to disembodiment. However, there is a crucial point of contention between the two of them. Where Virilio thinks that this will to disembodiment is achievable (indeed, given the pace of technological development, it is, for him, almost inevitable, if it hasn't already happened), for Nietzsche it is not. Virilio claims that "...the goal of science and technology has indeed now been attained. To eradicate the gap, to put an end to the scandal of the interval of space and time that used to separate man so unacceptably from his objective: all this is well on the way to being achieved."²⁰ On the contrary, Nietzsche wants to make clear that, as much as the despisers of the body might wish the body away, the body will always be there. Indeed, the will to disembodiment is itself an effect of the body (and more importantly, an *affect* of the body).

Believe me, my brothers: it was the body that despaired of the body and touched the ultimate walls with the fingers of a deluded spirit. Believe me, my brothers: it was the body that despaired of the earth and heard the belly of being speak to it. It wanted to crash through these ultimate walls with its head, and not only with its head - over there to "that world." But "that world" is well concealed from humans - that dehumanized inhuman world which is a heavenly nothing; and the belly of being does not speak to humans at all, except as a human.²¹

Nietzsche's awareness that the 'belly of being does not speak to humans at all, except as a human' is a

19 Virilio *Open Sky* pp 103-104, 113

20 Virilio *Open Sky* p. 119

21 Nietzsche "Zarathustra" pp.143-144

result of his attention to how much how much mental activity goes on below the surface of consciousness, his awareness of the role which somatic affect plays in the thinking process.

“Body am I, and soul” - thus speaks the child. And why should one not speak like children? But the awakened and knowing say: body am I entirely, and nothing else; and soul is only a word for something about the body...behind your thoughts and feelings, my brother, there stands a mighty ruler, and unknown sage – whose name is self. In your body he dwells; he is your body. There is more reason in your body than in your best wisdom.²²

What this means is that, even as we are struck by the desire to cast off our body, this affective *ressentiment* itself springs from our bodies. Wherever we go, there we are.

It was the sick and decaying who despised body and earth and invented the heavenly realm and the redemptive drops of blood: but they took even these sweet and gloomy poisons from body and earth. They wanted to escape their own misery, and the stars were too far for them. So they sighed: “Would that there were heavenly ways to sneak into another state of being and happiness!” Thus they invented their sneaky ruses and bloody potions. Ungrateful, these people deemed themselves transported from their bodies and this earth. But to whom did they owe the convulsions and raptures of their transport? To their bodies and this earth.²³

Indeed, as much as Virilio fears the prostheticization of the body through speed, and as much as capitalist rhetoric, western metaphysics and some strains of contemporary techno-science glory in the possibility of casting off the slow and cumbersome constraints of world and flesh, the fact is, the body - materiality, corporeality - simply cannot be left behind. Note, this is not to say that the body cannot be changed – or, perhaps better that patterns of embodiment won't shift and transform in the face of technological (not to mention political, economic, social and cultural) change. Indeed, as Bernard Steigler argues through his concept of "technogenesis", the emergence and evolution of the human body, brain and subjectivity has been co-eval with technological innovation²⁴. Thus while technophiles predict our imminent virtualization in ICTs and digital networks - providing succor for those despisers of the body who dream of an end to their suffering, and a mastery over their *ressentiment* (though notice not an *overcoming* of that *ressentiment* a different process entirely) - such dreams ignore the fundamental materiality and corporeality of the processes of perception and thought, even in the

22 Nietzsche “Zarathustra” pp. 146-147

23 Nietzsche “Zarathustra” pp. 144-145

24 Steigler, Bernard *Technics and Time, 1: The Fault of Epimetheus* Trans. Richard Beardsworth and George Collins (Stanford, CA: Stanford University Press, 1998) p. 45

context of digital acceleration.

Remember, in her comment above, Hayles made it clear that it was only “for users who may not know the material processes involved” that “the impression is created that pattern is predominant over presence.”²⁵ What this means is that the technophile's dreams, and Virilio's fears, are premised not upon a genuine virtuality, which is to say a real disembodiment, but rather in terms of a cultural, social, economic and technological narrative which lets us *imagine* that our bodies have disappeared and that our minds have slipped the surly bonds of earth. But this is really just a case of 'out of sight, out of mind'. Even a cursory glance at the material characteristics of contemporary ICTs and digital networks brings us crashing back to earth (and into our bodies). And this is true from multiple perspectives and at multiple scales.

For example, even as Virilio talks of fundamental changes to human society - to *human-being* - through ICTs and digital networks, we know that their distribution and penetration is far from universal. Large asymmetries of access exist – both between the global north and south, and within each – in the so-called “digital divide”. For example, in 2011 in the developing world there were 73.8 internet users for every 100 people; in the developed world that number was 26.3.²⁶

But more than this, speaking of virtuality - of a speed that lets you leave behind the body - is only possible by ignoring the materiality of the technologies and networks that make possible the delirious speeds of ICTs and digital networks. Indeed, there is something similar here to Nietzsche's

25 Hayles *Posthuman* p. 19

26 International Telecommunications Union *ICT Data and Statistics* Last accessed on June 27, 2012 at: <http://www.itu.int/ITU-D/ict/statistics/> To be fair, Virilio is aware of this divide, and aware of the power and violence implicit in it, saying “The global metropolitics of the future electronic information highways in itself implies the coming of a society no longer divided so much into North and South, but into two distinct temporalities, two speeds: one *absolute*, the other *relative*. The gap between developed and underdeveloped countries being reinforced throughout the five continents and leading to an even more radical divide between those who will live under the empire of real time essential to their economic activities at the heart of the virtual community of the *world city*, and those, more destitute than ever, who will survive in the real space of *local towns*, that great planetary wasteland that will in future bring together the only too real community of those who no longer have a job or a place to live that are likely to promote harmonious and lasting socialization.” [Virilio *Open Sky*, p. 71] And yet, even as he criticizes this new regime of late-modern info-capitalism, he accepts and perpetuates its central mythos, mainly that it is global and virtual. That it has successfully cast off the constraints of locality and corporeality. In this regard, Virilio speaks in the same voice as the Toshiba commercial above, even though he says it with a frown instead of a smile. In this regard there is a similarity here between Virilio's treatment of the claims of late-modern info-capitalism and the claims of military omnipotence by first world militaries, which I discuss in chapter two of my *The Politics of Speed*.

account of the formation of consciousness through the force of 'forgetfulness'. According to Nietzsche, for our consciousness to emerge as a seemingly free, willful, rational, *unextended spirit*, it must first forget the role that the body plays in cognition. We must “shut the doors and windows of consciousness for a while; not to be bothered by the noise and battle with which our underworld of serviceable organs work with and against each other; a little peace, a little *tabula rasa* of consciousness...”²⁷ Similarly, for us to imagine digital networks as a gate way to virtuality, to that 'nonplace of the mind' is to forget the vast material infrastructure which is necessary to make such extensions and accelerations of perception possible. And to conceive this process as a liberating one we must ignore the ways in which these material infrastructures have just as many constraints built into them as the 'physical spaces' which Toshiba promises to free us from. (It is true, Virilio does recognize the constraining effects digital networks, but simply inverts the relationship, pairing off this constrained, automatized, prosthetic body to the free, natural, healthy, non-pathological body. In both cases, there is the aura of a *ressentiment* which seeks to posit a state or a space free of struggle or suffering, a state in which we are no longer constrained, in which we are free). Indeed, understanding the way in which the experiences of thought and perception which we call 'virtual' come to be requires an understanding of the materiality of both world and flesh.

On the one hand, we must pay careful attention to the physical infrastructure which makes possible these interactions. We must be attentive to the technics and politics of where fiber-optic cables are laid (and, of course, where it is not, as questions of the digital divide so clearly spell out), and what amount of bandwidth is available, and to whom. Adrian Mackenzie points to the way in which dreams of ubiquitous connectivity and virtuality are stymied by the so-called “last-mile” problem, the fact that “while central infrastructures and network backbones can mostly be constructed speedily and expediently, the sheer number and variety of connections needed to hook every room, desk, village, chair, building, bag, pocket, pole, cabin, footpath, or other place to a telecommunications network often

²⁷ Nietzsche *Genealogy of Morality* p.35

entail vast expense, upheavals, or complications.”²⁸ Mackenzie also points out that even 'wireless' internet access, the technology which Toshiba (amongst others) claims will allow us to “lose the wires [and] be free”, is itself dependent on a network of antennae that are profoundly 'local' and profoundly 'wired'. “An antenna is a geographic-topographic construct. The very calculations that determine how high, how big, and what shape and size it should be, all relate to geography and signal propagation. And this is not a geography seen from on high, but a geography lived as landscape or place, since it is sensitive to obstacles, barriers, heights, depths, nearness, and distance.”²⁹ And this relates not just to the large fixed antennae, but also to the smaller, frequently hidden ones in our mobile devices. Indeed, though these devices make us connected to a seemingly virtual and global network, they also make us paradoxically more attuned to our location, as we become aware of spaces which might inhibit or help our 'signal strength' such as underground parking garages, buildings, rural areas or buildings with heavy electromagnetic interference.

Nor does an attentiveness to the materiality of perception in the context of ICTs stop with questions of hardware. Software too plays a crucial role in shaping and constraining thought, perception and experience. We must be attentive to what kinds of codes and architectures underlie communications networks, and thus how can communicate (not to mention how we can, and who is watching when we do). As Lawrence Lessig points out 'code is law.' While code might provide for more or less free communication and interaction, it will never allow for 'free' communication and thought. Furthermore, the impact of software exists not just at the layer of invisible protocols and codes, but at the most immediate level of the human-computer interface (HCI). Far from freeing our minds through virtual universality and 'absolute speed', these interfaces necessarily constrain perception - and thus thought - in key ways. As Lev Manovitch puts it in his analysis of new media

As is the case with all cultural representations, new media representations are also inevitably biased. They represent/construct some features of physical reality at the expense of other, one worldview among many, one possible system of categories among numerous other....software

28 Mackenzie *Wirelessness* p. 7

29 Mackenzie *Wirelessness* p. 125

interface – both those of operating systems and of software applications – also act as representations. That is, by organizing data in a particular way, they privilege particular models of the world and the human subject³⁰

Note here the invocation of a “worldview”, of a *particular* worldview. The benefits of a virtual nonplace, the advantages of a perception that can see at 'absolute speed', is supposed to be its lack of perspective, its very lack of both 'world' and 'view'. And yet Manovich reminds us that, where there is aesthetics (as there surely is in cyberspace) there is always already an embodied perception.

And this brings us to the second sphere of materiality which we must be attentive to when investigating the constrained nature of perception and thought in relation to technology: the body. Indeed, as Manovich points out, it is exactly at the point of an interface (of whatever kind) - at the point where we can speak of 'aesthetics' - that flesh and world meet. Hayles points out that perception, of whatever kind (however 'mediate' or 'immediate') is always already embodied. As she puts it “Information, like humanity, cannot exist apart from the embodiment that brings it into being as a material entity in the world; and embodiment is always instantiated, local, and specific.”³¹ As much as we narrate our experiences with ICTs and digital networks as disembodiment, our body is always in play, shaping and being shaped by the process of perception, shaping and being shaped by our interactions with different technologies. For example, listen to Hayles' account of computer use. Although taken as the disembodiment technology par excellence, Hayles points out the obvious, and yet ignored, fact that this experience has a singular, effective, and affective corporeality to it.

The computer restores and heightens the sense of word as image – an image drawn in a medium as fluid and changeable as water. Interacting with electronic images rather than with a materially resistant text, I absorb through my fingers as well as my mind a model of signification in which no simple one-to-one correspondence exists between signifier and signified. I know kinesthetically as well as conceptually, that the text can be manipulated in ways that would be impossible if it existed as a material object rather than a visual display. As I work with the text-as-flickering-image, I instantiate within my body the habitual patterns of movement that make pattern and randomness more real, more relevant, and more powerful than presence and absence.³²

30 Manovich, Lev *The Language of New Media* (Cambridge: MIT Press, 2001) p. 15-16

31 Hayles *Posthuman* p. 48-49

32 Hayles *Posthuman* p. 26

Note that, in this passage, Hayles acknowledges that there is something different and unique about writing using a word processor, as compared to a typewriter, or pen (or dictation, for that matter). Indeed, she even happily invokes words which technophilic business writers use when discussing cyberspace; that it is a medium as fluid and changeable as water, that text becomes manipulable flickering electronic images. Neither Hayles, nor I, are claiming that nothing has changed in our experience of thinking, perceiving or creating with the rise of ICTs or digital networks. Rather, she wishes to make clear that the change is not from embodiment to disembodiment, from materiality to virtuality, but from one *kind* of embodiment to another. The fluidity of information is experienced not just conceptually, but 'kinesthetically', not just as modes of thought, but as 'habitual patterns of movement instantiated within the body'.

What is more, we cannot simply dismiss this as the result of insufficiently advanced technology. It is not that we are on the cusp of true virtualization waiting for the last technological salvo to get us over the top. Mark B.N. Hansen's analysis of virtual reality, mixed reality and augmented reality makes clear the way in which these most 'virtualized' of technologies and interfaces are still never free of the constitutive role of embodiment in perception. He notes the way in which the most successful 'VR' projects have been those which have emphasized, rather than transcended, markers of embodied perception, such as proprioception, tactility and audility.³³ Furthermore, he discusses how even the most immersive digital environment will necessarily require, and evoke, an embodied perceptual experience.

In any VR encounter

there necessarily takes place, within the body of the participant, an embodied experience: a bodily processing of the action that has the effect of “making it real” for the participant. Indeed, it is precisely this “hallucinatory” dimension, applied to virtual reality more generally, that explains the capacity for the VR interface to couple our bodies with (almost) any arbitrary space, and not just spaces that are contiguous with the physical space we happen to occupy or even spaces that are like those we typically occupy.³⁴

Again, the fact that VR interfaces have the ability (or at least the potential) to 'couple our bodies with

33 Hansen, Mark B.N. *Bodies in Code: Interfaces with Digital Media* (Milton Park, Abingdon, UK: Routledge, 2006) ch. 2

34 Hansen *New Philosophy for New Media* p. 41

(almost) any arbitrary space', ensures that the spatiality of the body, or the world, is not left unchanged. What is clear, however, is that even in 'Virtual' reality, neither the world nor the flesh is left behind.

This is because perception is always inherently and primarily an embodied phenomenon.

Contrary to how major western philosophical figures such as Descartes sought to identify perception as fundamentally allied with thought (and the two of them opposed to - or seeking to overcome the restrictions of – the body), we must think of perception always as a bodily process. Here we can turn to one of the foremost thinkers of embodied perception, Merleau-Ponty, who states that

the way we relate to the things of the world is no longer as a pure intellect trying to master an object or space that stands before it. Rather, this relationship is an ambiguous one, between beings who are both embodied and limited and an enigmatic world of which we catch a glimpse (indeed which we haunt incessantly) but only ever from point of view that hide as much as they reveal, a world in which every object displays the human face it acquires in a human gaze.³⁵

What is more, this ambiguous, embodied, limited character of perception remains, even if we turn from the physical world to virtual worlds (or rather if we engage with the material infrastructures which give rise to experiences of 'virtuality'). This is because this embodied character is an inherent characteristic of our perceptual faculties. Our perception is not a passive recipient of objective sense data, a 'pure intellect' there to provide an accurate representation of the world. Indeed, one of the other major thinker of embodied perception, Henri Bergson, doesn't even think human beings are capable of forming 'representations'. This is because representation is something that only a passive being could produce, a screen which would receive images, whereas human perceptual faculties always developed evolutionarily as part of a *sensorimotor* system, i.e. a fundamentally active system. As he says “*My body, an object destined to move other object, is, then a center of action; it cannot give birth to a representation.*”³⁶

Critics and boosters of ICTs are able to fear and praise their disembodied effects only because they have an image of human perception and thought which is always already *disembodied*. They speak

like Nietzsche's child, who says “*Body am I, and soul*”. The technophiliac praises technology for the

³⁵Merleau-Ponty, Maurice *The World of Perception* Tran. Oliver Davis (London: Routledge, 2004) p. 53-54

³⁶Bergson, Henri *Matter and Memory* Trans. N.M. Paul and W.S. Palmer (Zone Books: New York, 1991) p. 20

way in which it frees the soul from the body, while the technophobe fears the way in which technology might capture the soul in a prostheticized body. But for Bergson and Merleau-Ponty, the soul and the body are, if not exactly 'one', at the very least inseparable. And thus, while new technologies might introduce new perceptions, new embodiments, new forms of consciousness, even new bodies, they will never produce a *disembodiment*, proper.

Accepting this point means rejecting the *ressentiment* of the despisers of the body, of those strands of the enlightenment which seek an absolute rationality in a purification of vision allowing us to escape the uncertainty, flux, and confusion of the corporeal world of becoming. Merleau-Ponty says as much, when he makes clear that an awareness of the embodied character of perception is to accept that to be is to be a body in the world; a world which, as he says, 'hides as much as it reveals', a world which is full of other bodies who resolutely refuse to bow down to our desires for mastery.

In this ambiguous position, which has been forced on us because we have a body and a history (both personally and collectively), we can never know complete rest. We are continually obliged to work on our differences, to explain things we have said that have not been properly understood, to reveal what is hidden within us and to perceive other people. Reason does not lie behind us, nor is that where the meeting of minds takes place: rather, both stand before us waiting to be inherited. Yet we are no more able to reach them definitively than we are able to give up on them.³⁷

The question of perception and embodiment (and how we think of both) is then always already an ethical and political issue. As new technologies inaugurate new styles and forms of perception and embodiment, this will have an impact on the ways in which we act in the world (as Bergson points out, action and perception are always intimately linked through the intersection of world and body). This means that, even as I disagree with Virilio's conclusions about the effects of advanced ICTs and digital networks, I agree with him that they are having a profound impact on politics, society, economics, culture, subjectivity and affection. And that one of the prominent vectors of these transformations is the acceleration of communication. We must therefore seek to develop a mode of analysis which can seek to grasp the effects that acceleration has on the always already embodied process of perception. What

37 Merleau-Ponty *The World of Perception* pp. 66-67

are the ethical and political implications of these effects, and what sorts of responses at the global, domestic and individual level might we want to enact to ensure that we can continue to struggle for justice, equality and democracy? In some cases this will involve resisting, challenging or attempting to modify dominant communications regimes. In other cases, it will involve availing ourselves of the new possibilities these technologies provide us with. In no case is an outright rejection of these technologies possible. As Hayles says

Paul Virilio has observed that one cannot ask whether information technologies should continue to be developed. Given market forces already at work, it is virtually (if I may use the word) certain that we will increasingly live, work, and play in environments that construct us as embodied virtualities. I believe that our best hope to intervene constructively in this development is to put an interpretive spin on it – one that opens up the possibilities of seeing pattern and presence as complementary rather than antagonistic.³⁸

For her language of pattern and presence, we can substitute a language of virtuality and embodiment.